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TITLE: Automatic clutch control device

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US-CL-CURRENT: 477/74

CLAIMS:

What is claimed is:

1. An automatic clutch control device comprising: a clutch connecting/disconnecting actuator for driving a clutch, disposed between an output shaft of a power source of a vehicle and an input shaft of a transmission, so as to be connected or disconnected; and a clutch control means that executes a disconnecting operation for changing the state of the clutch from a connecting state to a disconnecting state before the transmission starts the shift operation and executes a connecting operation for changing the state of the clutch from the disconnecting state to the connecting state after the shift operation is completed, wherein the clutch control means changes at least one of a speed of the connecting operation and a speed of the disconnecting operation in accordance with a running state of the vehicle.

2. An automatic clutch control device claimed in claim 1, comprising road friction coefficient obtaining means for obtaining a road friction coefficient that is a friction coefficient between the road surface on which the vehicle runs and a tire of the vehicle, wherein the clutch control means is configured to change at least one of the connecting operation speed and the disconnecting operation speed in accordance with the road friction coefficient.

3. An automatic clutch control device claimed in claim 2, wherein the clutch control means is configured to slow at least one of the connecting operation speed and the disconnecting operation speed as the road friction coefficient is smaller.

4. An automatic clutch control device claimed in claim 3, wherein the clutch control means is configured to slow only the connecting operation speed as the road friction coefficient is smaller.

5. An automatic clutch control device claimed in claim 1, wherein the vehicle, to which the automatic clutch control device is applied, comprises vehicle stabilizing control executing means for setting a target wheel speed related amount of each wheel in accordance with a running state of the vehicle and controlling braking force exerted on each wheel such that an actual wheel speed related amount of each wheel becomes the target wheel speed related amount, and the clutch control means is configured to change at least one of the connecting operation speed and the disconnecting operation speed depending upon whether the vehicle stabilizing control is executed or not.

6. An automatic clutch control device claimed in claim 5, wherein the clutch control means is configured to slow at least one of the connecting operation speed and the disconnecting operation speed when the vehicle stabilizing control is executed, compared to the case where the vehicle stabilizing control is not executed.

7. An automatic clutch control device claimed in claim 6, wherein the clutch control means is configured to slow only the connecting operation speed when the vehicle stabilizing control is executed, compared to the case where the vehicle stabilizing control is not executed.

8. An automatic clutch control device claimed in claim 1, comprising determining means that determines whether a predetermined operation for obtaining an acceleration greater than an acceleration obtained when the vehicle is in the normal running state is executed or not by a driver, wherein the clutch control means is configured to change at least one of the connecting operation speed and the disconnecting operation speed depending upon whether the predetermined operation is executed or not.

9. An automatic clutch control device claimed in claim 8, wherein the clutch control means is configured to increase at least one of the connecting operation speed and the disconnecting operation speed when the predetermined operation is executed, compared to the case where the predetermined operation is not executed.

10. An automatic clutch control device claimed in claim 9, wherein the clutch control means is configured to increase only the connecting operation speed when the predetermined operation is executed, compared to the case where the predetermined operation is not executed.

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